

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau(43) International Publication Date  
24 July 2003 (24.07.2003)

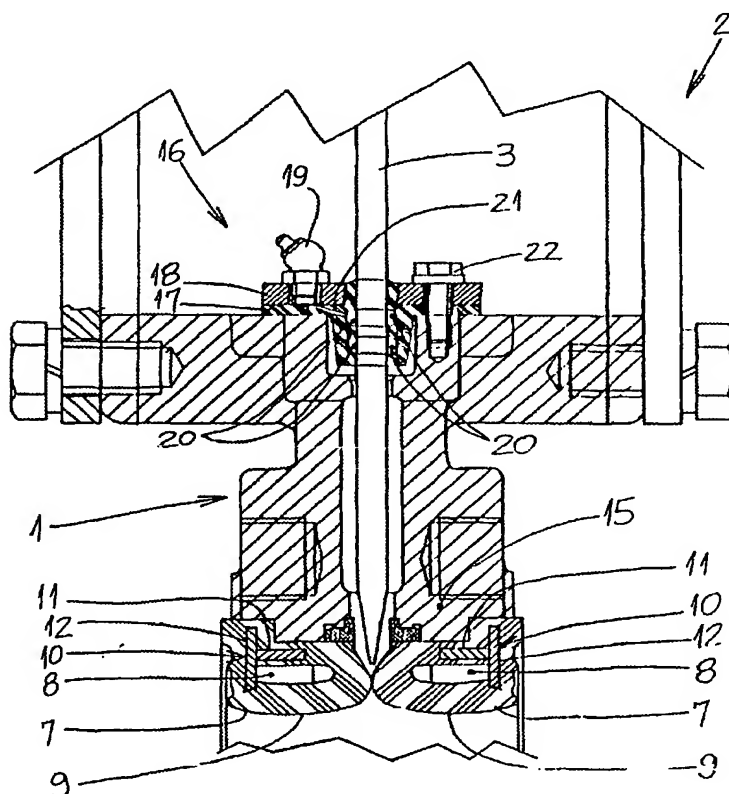
PCT

(10) International Publication Number  
**WO 03/060360 A3**

- (51) International Patent Classification<sup>7</sup>: **F16K 3/02**, 3/20, F16J 15/52
- (21) International Application Number: PCT/BR03/00002
- (22) International Filing Date: 10 January 2003 (10.01.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
PI 0200134-9 15 January 2002 (15.01.2002) BR
- (71) Applicant (for all designated States except US): **WEIR DO BRASIL LTDA.** [BR/BR]; Rua João Ventura Batista, 622, CEP-02054-100 São Paulo, SP (BR).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **RODRIGUES SANTIAGO, Osvaldo** [BR/BR]; Estrada Embu Mirim, 1197A, CEP-06850-000 Itapeverica da Serra, SP (BR).
- (74) Agent: **TINOCO SOARES, José, Carlos, Jr.**; Tinoco Soares & Filho S/C Ltda., Av. Indianópolis, 995, CEP-04063-001 São Paulo, SP (BR).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: GUILLOTINE VALVE



(57) Abstract: A guillotine valve - used for example in pipelines - is described. It contains a single block body (1) incorporating sealing elements (7) each in the form of an annular hose section, which are made of an elastomeric material and which are hollow along their entire circumference, each providing an airtight pneumatic circumferential chamber (8), filled with air. Due to the compressibility of the chambers (8) the contact faces of the hose sections (7) deform uniformly in relation to the closing blade (3). Advantageously the hose sections (7) have convex contours on their internal faces (9), resulting in a further sealing effect due to the pressing together of the contact faces by the pressure of the pipeline fluid. Moreover the hose sections (7) can incorporate each a T-shaped metal core (10), consisting of an axial portion (11) and a radial portion (12).



**Published:**

— with international search report

**(88) Date of publication of the international search report:**

4 December 2003

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International application No.  
T/BR 03/00002

## CLASSIFICATION OF SUBJECT MATTER

IPC<sup>7</sup>: F16K 3/02, 3/20, F16J 15/52

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>7</sup>: F16K, F16J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPI, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|----------|---|-----------------------|
| Y        | US 5271426 A (CLARKSON ET AL.) 21 December 1993 (21.12.93)<br><i>fig. 1-5, abstract, column 4, lines 13-22, 37-48, column 5 lines 29-32.</i>                        | 1-4                   |
| Y        | US 4527773 A (MÜLLER ET AL.) 9 July 1985 (09.07.85)<br><i>fig. 1-3, column 4, lines 31-54.</i>  | 1-4                   |
| A        | US 3333816 A (WILLIAMS ET AL.) 1 August 1967 (01.08.67)<br><i>fig. 1, 4, 4A, column 3 lines 27-30, column 3, line 56 - column 4, line 5, column 2, lines 56-59.</i> | 1,2,5,7               |
| A        | JP 11-063249 A (KUMAKURA) 5 March 1999 (05.03.99)<br><i>abstract, fig. 1, annular air reservoir chamber 26.</i>   | 1                     |
| A        | US 4693447 A (PEREZ) 15 September 1987 (15.09.87)<br><i>fig. 2, 3a-3c, column 4, lines 59-66.</i>   | 1                     |

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&amp;“ document member of the same patent family

Date of the actual completion of the international search

15 April 2003 (15.04.2003)

Date of mailing of the international search report

1 July 2003 (01.07.2003)

Name and mailing address of the ISA/AT

Austrian Patent Office

Dresdner Straße 87, A-1200 Vienna

Facsimile No. 1/53424/535

Authorized officer

EHRENDORFER K.

Telephone No. 1/53424/367

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/BR 03/00002

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                       | Relevant to claim No. |
|-----------|--|-----------------------|
| A         | GB 2091845 A (POWER HOUSE ENGINEERING LTD.)<br>4 August 1982 (04.08.82)<br><i>abstract, fig. 2, page 1, lines 50-63.</i> | 1                     |
| A         | US 5150881 A (MC KAVANAGH) 29 September 1992<br>(29.09.92)<br><i>abstract, fig. 1,3,4.</i>                               | 1,5                   |

## INTERNATIONAL SEARCH REPORT

PCT/BR 03/00002

| Patent document cited<br>in search report |    |          | Publication<br>date | Patent family<br>member(s) |    | Publication<br>date |
|---|----|----------|---------------------|----------------------------|----|---------------------|
| GB  | A1 | 2091845  | 04-08-1982          | none                       |    |                     |
| GB  | B2 | 2091845  | 05-12-1984          |                            |    |                     |
| JP  | A2 | 11063249 | 05-03-1999          | none                       |    |                     |
| US  | A  | 3333816  |                     | none                       |    |                     |
| US  | A  | 4527773  | 09-07-1985          | AU                         | A1 | 12427/83            |
|   |    |          |                     | AU                         | B2 | 556468              |
|   |    |          |                     | DE                         | A1 | 3208906             |
|   |    |          |                     | DE                         | C2 | 3208906             |
|   |    |          |                     | FR                         | A1 | 2523252             |
|   |    |          |                     | FR                         | B3 | 2523252             |
|   |    |          |                     | GB                         | A0 | 8306772             |
|   |    |          |                     | GB                         | A1 | 2116679             |
|   |    |          |                     | GB                         | B2 | 2116679             |
|   |    |          |                     | IN                         | A  | 158607              |
|   |    |          |                     | IT                         | A0 | 8347679             |
|   |    |          |                     | IT                         | A  | 1164608             |
|   |    |          |                     | JP                         | A2 | 58163873            |
|   |    |          |                     | NL                         | A  | 8300862             |
|   |    |          |                     | ZA                         | A  | 8301701             |
| US  | A  | 4693447  | 15-09-1987          | DE                         | C0 | 3772684             |
|   |    |          |                     | EP                         | A2 | 260962              |
|   |    |          |                     | EP                         | A3 | 260962              |
|   |    |          |                     | EP                         | B1 | 260962              |
|   |    |          |                     | JP                         | A2 | 63121548            |
| US  | A  | 5150881  | 29-09-1992          | CA                         | AA | 2078021             |
|   |    |          |                     | CA                         | C  | 2078021             |
|   |    |          |                     | US                         | A  | 5330156             |
| US  | A  | 5271426  | 21-12-1993          | AU                         | A1 | 20630/92            |
|   |    |          |                     | AU                         | B2 | 649344              |
|   |    |          |                     | CA                         | AA | 2074737             |
|   |    |          |                     | CA                         | C  | 2074737             |
|   |    |          |                     | DE                         | A1 | 4226821             |
|   |    |          |                     | DE                         | C2 | 4226821             |
|   |    |          |                     | GB                         | A0 | 9216234             |
|   |    |          |                     | GB                         | A1 | 2258715             |
|   |    |          |                     | GB                         | B2 | 2258715             |
|   |    |          |                     | SE                         | A0 | 9202281             |
|   |    |          |                     | SE                         | A  | 9202281             |
|   |    |          |                     | SE                         | C2 | 507806              |
|   |    |          |                     | US                         | A  | 5370149             |
|   |    |          |                     | RU                         | C1 | 2101590             |
|   |    |          |                     | ZA                         | A  | 9302100             |
|   |    |          |                     | US                         | A  | 5279749             |
|   |    |          |                     | BR                         | A  | 9404094             |
|   |    |          |                     | CA                         | AA | 2127057             |
|   |    |          |                     | CA                         | C  | 2127057             |
|   |    |          |                     | CA                         | AA | 2041504             |
|   |    |          |                     | DE                         | A1 | 4116258             |
|   |    |          |                     | GB                         | A1 | 2253409             |
|   |    |          |                     | JP                         | A2 | 5092232             |
|   |    |          |                     | JP                         | B4 | 7059344             |
|   |    |          |                     | KR                         | B1 | 9409797             |